



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------|------------------|
| 09/925,679 | 08/10/2001 | Minoru Toriumi | 025311-0107 | 3716 |
| 22428 | 7590 | 12/23/2003 | EXAMINER CHU, JOHN S Y | |
| FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007 | | | ART UNIT 1752 | PAPER NUMBER |

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/925,679 | TORIUMI ET AL. |
| | Examiner John S. Chu | Art Unit 1752 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 December 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 2-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 2-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

This Office action is in response to the RCE filed December 9, 2003.

Claim Rejections - 35 USC § 103

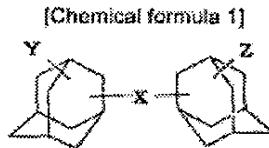
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over NOZAKI et al.

The claimed invention is now drawn to:

2. (Currently Amended) The resist composition comprising:
at least one type of a first compound having two or more intramolecular adamantly structures;
a base resin; and
a second compound which generates an acid by active beam irradiation; wherein
at least one type of said first compound is represented by the chemical formula
1:



wherein X is -(OCO)_m-(CH₂)_n-(COO)_{m'}, where m = 0 or 1 and n = 0, 1, 2 or 3 provided when n = 0, m = 0; and

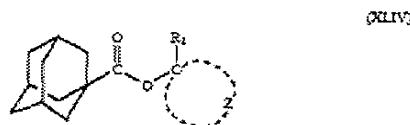
Y and Z are H, OH, F, Cl, Br, R or COOR, where Y may be Z, or Y and Z may be introduced in a single adamantyl structure and R represents a straight or branched alkyl group having 1 to 8 carbon atoms, wherein if Y is H then Z is one of OH, F, Cl, Br, R or COOR, and if Z is H then Y is one of OH, F, Cl, Br, R or COOR, and wherein if Y is R then Z is one of H, OH, F, Cl, Br or COOR, and if Z is R then Y is one of H, OH, F, Cl, Br or COOR.

NOZAKI et al discloses a photoresist composition comprising as additives unpolymerized compounds found in column 31, line 36 – column 33, line 5, wherein these compounds disclose structures which meet the claimed second compound of claim 2, see compound (XLVI). NOZAKI et al goes on to disclose that if the non-polymeric compounds are used an alkali-soluble resin is added as a combination to give the required resist characteristics to the resist composition (column 32, lines 59-65).

NOZAKI et al lacks the presence of the unpolymerized compound used in an explicit example in a photoresist composition.

It would have been *prima facie* obvious to one of ordinary skill in the art of photoresist composition to use any of the listed compounds in column 31, line 36 – column 33, line 5 as a dissolution inhibitor with a base resin and an acid generator in the photoresist composition with the reasonable expectation of same or similar results as recited in NOZAKI et al for a photoresist suitable for excimer laser lithography, highly sensitive resist composition and having excellent dry etch resistance without swelling.

The examiner notes the arguments by applicant for the definition of Y and Z, however the prior art reference continues to meet the claimed invention when Z is R, Y is H. The structure below meets the claimed invention, see column 10, lines 39-42 for the definition of R₁.



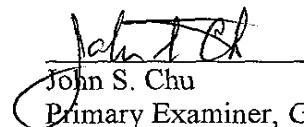
Application/Control Number: 09/925,679
Art Unit: 1752

Page 4

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

The fax phone number for the USPTO is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
December 15, 2003